Archaeology & History in Lebanon Issue fourteen : Autumn 2001, p. 2-7.

THE CEDAR OF LEBANON IN HISTORY

*F. Nigel Hepper**

2

In Lebanon the cedar (*Cedrus libani*) is featured everywhere from the flag to the national airline and soldiers' uniforms. Regrettably, however, on the ground this great tree is now represented by remnants growing in scattered reserves on the Mount Lebanon range. The splendid horizontal branching is very characteristic of old cedars growing up to 40m (120ft) high with a girth of 8m (30ft) or more, although young ones have the conical appearance of a traditonal Christmas tree. Sometimes in literature there is a confusion in the use of the name 'cedar' for all sorts of trees that have nothing to do with the genus *Cedrus* - eg. *Thuja plicata* from British Columbia. Here is a warning to archaeologists who frequently refer to junipers (*Juniperus*) as cedars; and there are also a dozen other unrelated species around the world bearing the name 'cedar', although not related to *Cedrus*. It is worth remembering the when dealing with plant names in ancient texts there is a tendency for translators to be imprecise, so one needs to beware of certain references to 'cedar' when this may have been a convenient rendering of an obscure word for a tree or timber.

How long do cedars live? It is often possible to bore into tree trunks and count the annual rings or, nowadays, to subject the timber to carbon dating analysis. Most of the ones sampled separately by Professor Beals [E. W. Beals, The remnant cedar forests of Lebanon, *Journal of Ecology* 53: 679-694, Oxford, 1963 and by Liphshitz and Biger [N. Liphshitz & G. Biger, The Cedar of Lebanon, *Cedrus libani*, in Israel during antiquity, *Israel Exploration Journal* 41:167-175, Jerusalem, 1991] were about 400 years old, with some much younger. One hears that the huge ones at Bsharre are over 1000 years old and it seems to be quite likely that one or two trees are as old as that, but there is no scientific evidence to confirm it. Trees in southern Turkey were sampled by two German botanists [H. Mayer & M. Sevim, Dei Libanzeder, *Jb. d. Ver. z. Schutze d. Alpenpflz. u.-Tiere, 1958*] who found some 300 to 500 years old.

As well as growing wild in Lebanon this cedar also occurs naturally in Turkey, especially in the Taurus Mountains where there are said to be 100,000 acres of cedar forest, Mount Amanus and a few in the Troodos of Cyprus, where it is often



1

*This text is based on part of a lecture given to the Palestine Exploration Fund.

1 An artist's impression of cedar cutters in Lebanon in ancient times. (Wood engraving after a drawing by Gustave Doré).

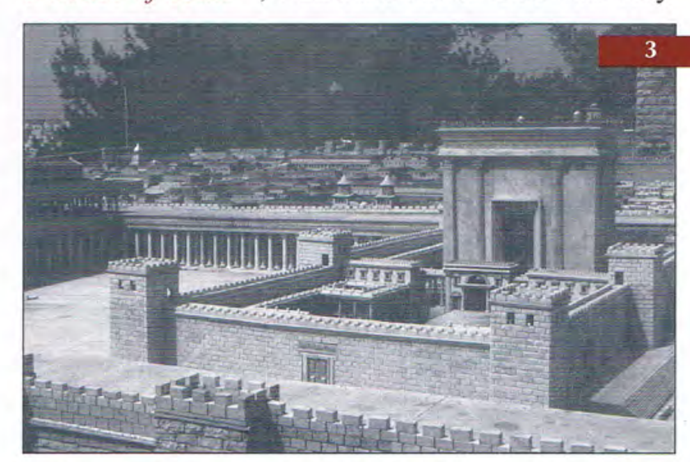
distinguished as the variety *brevifolia* (or even as a full species *Cedrus brevifolia*).

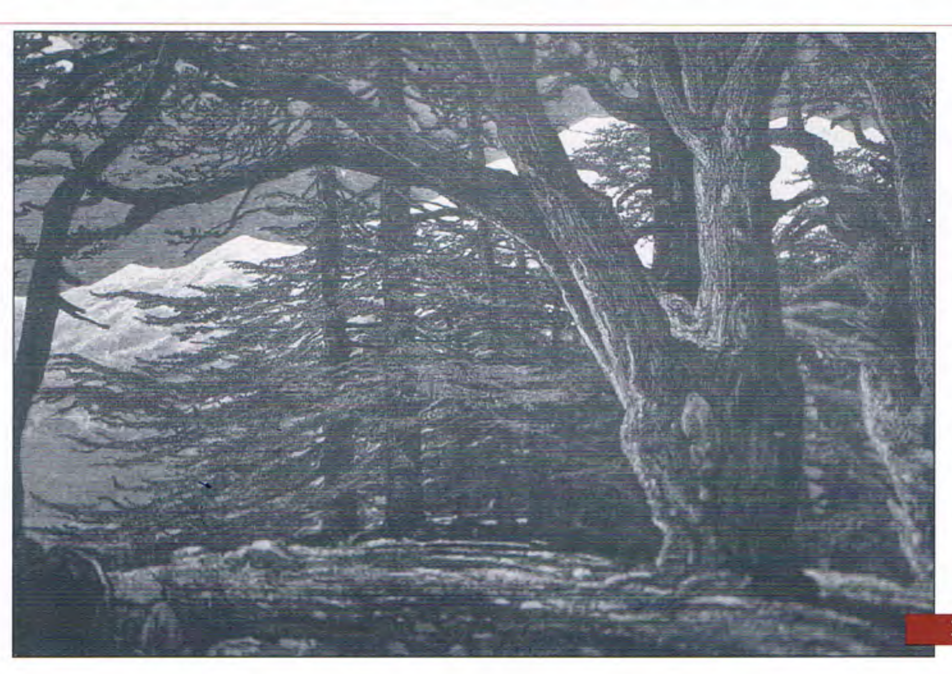
Cedar in the Bible

The cedar of Lebanon takes a prominent place in the Bible, with many passages referring to the tree or the timber [F. N. Hepper, *Illustrated Encyclopedia of Bible Plants*, Leicester, 1992, 31, 157] . The natural glory and fragrance of Lebanon is mentioned in the Song of Solomon (5:15): *"His countenance is as Lebanon, excellent as the cedars"*. Psalm 148:9 exhorts praise to the Lord from *'mountains, and all hills; fruitful trees, and all cedars'*, while Psalm 104:16 attributes cedars to God: *"The trees of the Lord are full of sap; the cedars of Lebanon, which he hath planted"*. The sheer size and strength of cedar trees gave rise to many allusions. Thus in Job 40:17 we read about the great behemoth animal *"He moveth his tail like a cedar"*, and later Ezekiel wrote (31:3-18): *"Behold the Assyrian was a cedar of Lebanon, and with his fair branches, and with a shadowing shroud, and of high stature; and his top was among the thick boughs..."* and so on, but because of their greatness and pride the Lord will cause the Assyrians to be brought down like cedars. Similarly, Amos (2:9) said that God *"destroyed the Amorite before them, whose height was like the height of the cedars"*. Yet God is so powerful that even *"The voice of the Lord breaketh the cedar; yea, the Lord breaketh the cedar of Lebanon."* The Bible also frequently mentions the forest fires that can be so destructive in resiniferous conifer forests:

"Open thy doors, O Lebanon, that fire may devour thy cedars. Howl, fir trees, for the cedar is fallen" *(Zechariah 11:1-2); and Jotham pictured fire burning the brambles and the cedars (Judges 9-15). Storms or armies were seen to be God's action as a timber cutter. For example in Isaiah 10:33: "he shall cut down the thickets of the forest with iron, and Lebanon shall fall mightily", and in Jeremiah 22:7: "I will prepare destroyers...they shall cut down thy choice cedars and cast them into the fire".*

Of course, it was from Lebanon that David and Solomon obtained the timber to build the royal palace aptly named *"the house of the forest of Lebanon"*, and then the Temple itself. Years before David had been ashamed that he dwelt *"in a house of cedar"*, while the ark of God was only within curtains (2 Samuel 7:2). He and Solomon





2 Venerable cedars of Lebanon, Cedrus libani, growing wild high up on Mount Lebanon where they are snow-covered for many months of each year. (Wood engraving from C. W. Wilson, *Picturesque Palestine*, London, 1883).

3 The Temple at Jerusalem built by Solomon used much cedar wood. Previously, his father, David, had constructed his own palace called 'The House of the Forest of Lebanon' using cedar wood pillars, beams and boarding. (Photo. of model of the Temple in Jerusalem, F. Nigel Hepper, 1998).

4

after him arranged with Hiram king of Tyre to muster workmen to cut down the trees. We read that Solomon provided food and drink for his men (2 Chronicles 2:10) and I worked out [F. N. Hepper, *Illustrated Encyclopedia of Bible Plants*, Leicester, 1992, 108] that the 20,000 baths of olive oil would have been equal to the annual yield of some 240,000 trees growing on 5000 acres of olive groves. The cereal and wine would also have had to be harvested and sent to Lebanon. The cedar trunks needed to be manhandled down to the coast, floated to Joppa and hauled up to Jerusalem (e.g. 1 Kings 4, 6, 7 & 9: also 1 Chronicles 14, 17 & 22: 2 Chronicles 2 etc.) The woodcutters of Sidon were famed for their skill, so it was probably the Chouf cedars that they felled. The re-built Temple in the times of Ezra and Nehemiah also used cedars from Lebanon (Ezra 3:7; Nehemiah 2:8). Among the precise details of the building of Solomon's temple is the remark *"and he built the inner court with three rows of hewn stone, and a row of cedar beams"* (I Kings 6.36). This practice of including wood within the stonework was an anti-earthquake device whereby the resilience of the timber would absorb the shock-wave of the quake. Unfortunately it was also responsible for the destruction of many buildings when they caught fire or when the timber rotted and the stones around them collapsed [H.C.Thompson, A row of cedar beams, *Palestine Exploration Quarterly*,1960,92,57-63]. Finally, when Solomon had built the Temple, we read in I Kings 6 that he *"covered the house with beams and boards of cedar"* and the cedar of the house was *"carved with knops and open flowers, and the oracle was overlaid with gold and the altar was of cedar"*. Although other timbers were also incorporated in the Temple, it seems that the principal one was cedar.

Importance of Cedar in Ancient Times

Russell Meiggs [R. Meiggs, *Trees and Timber in the Ancient Mediterranean World*, Oxford, 1982, 63-68] shows how the timber resources of Lebanon were so important to ancient Egypt that it largely governed their foreign policy in the eastern Mediterranean. That the Canaanites, Hittites, the people of Israel, and the Philistines lay in their way was, to the Egyptians, a tiresome interference in their strategy.

It seems remarkable that the Egyptians used cedar of Lebanon so early in their history. While compiling a list of timbers for a reference work on the materials of ancient Egypt [P. T. Nicholson & I. Shaw, eds., *Ancient Egyptian Materials and Technology*, Cambridge, 2000], I found time and again that cedar was identified, even as early as the predynastic period and it must have been imported by sea. Cedar was also reported from the great ship buried beside Cheops' 4th Dynasty pyramid, and soon afterwards Snefru imported forty ship-loads of cedar logs, according to an inscription on the

4 Cedar wood was used by the ancient Egyptians for Cheop's ship buried near his pyramid; the timber also occurs in many of their sea-going ships, model ships and the full-size oars in Tutankhamun's tomb.(Photo. of Cheop's ship courtesy Peter Clayton, 1998).

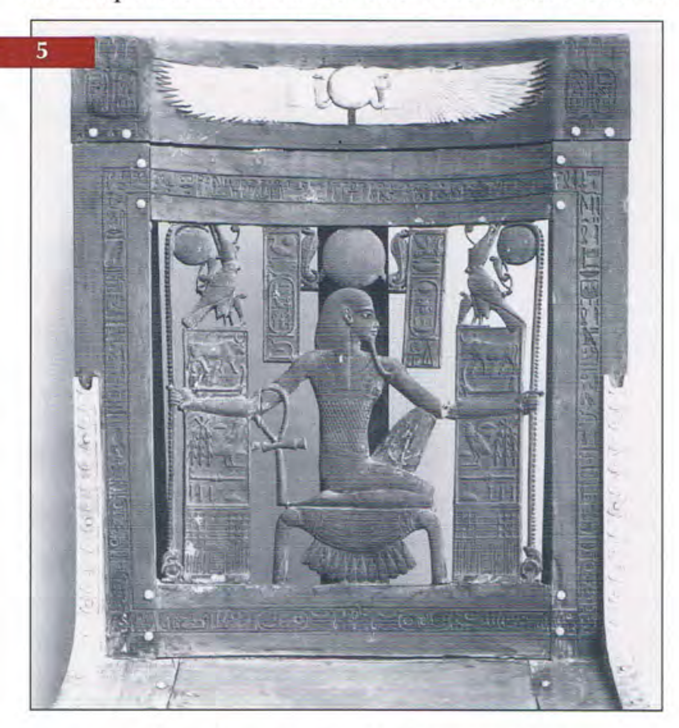
5 Tutankhamun's carved cedar wood chair back found in his tomb by Howard Carter and photographed by Harry Burton in 1922 (courtesy Griffith Institute, Oxford; also reproduced in F. Nigel Hepper, *Pharaoh's Flowers: the botanical treasures of Tutankhamun*, frontispiece & p.39, London, 1990).

4



5

Palermo stone. For centuries the port of Byblos had had a special link with Egypt for the export of timber, presumably obtained from the northern hills behind it. By the time of Tutankhamun in the 12th Dynasty during the New Kingdom cedar was in general use for many objects such as the beautifully carved chair-back, the foot-stool of the great throne and cabinets [F. N. Hepper, *Pharaoh's Flowers*, London, 1990, 37-46]. His chariot may also have had cedar incorporated with the imported elm wood and birch bark that is



5

known to have been used - it is interesting to recall that Solomon had a chariot made *"of the wood of Lebanon"*, presumably cedar (Song 3: 9). In subsequent dynasties cedar wood was used for numerous coffins and other objects that have been identified by plant anatomists at Kew and the British Museum from microscopic examination of thin sections of the timber that reveal the characteristic cellular structure of each species.

It was not only Egypt, however, that kept an eye on the resources of Lebanon. The more durable cedar timber was used in preference to fir (*Abies*) and pine (*Pinus*) that were available in the lands further east. The Assyrian monarch Tiglath-Pileser I attacked Phoenicia about 1100 BC and recorded that *"I went up to the Lebanon. I cut timbers of cedars for the temple of Anu..."* [R. Meiggs, *Trees and timber in the ancient Mediterranean world*. Oxford 1982, p.73]. Some 400 years afterwards another Assyrian bas-relief, now at the Louvre, depicts galleys being used to haul cedars, before ultimate transport to Assyria by land. The scene dates from the time of Sargon II about 720 BC. Cedar was used for Shalmeneser III's temple of Balawat having doors of cedar bound with copper, as can be seen in the display at the British Museum. It was also roofed with cedar, just as Solomon had roofed his temple in Jerusalem, and cedar was probably used for the Roman temple of Baalbek, too. Nebuchadnezzar of Babylon was so pleased with his exploitation of the Lebanese forests that he recorded:

"I cleft the high mountains, I cut blocks of stone from the mountains, I opened paths, prepared roads for the transport of the cedars. On the canal Avakhtu, as though they were reeds of the river, I floated large cedars, tall and strong, of great beauty, of imposing aspect, rich products of Lebanon".

[S. Moscati, *The World of the Phoenicians*, London, 1968].

In Roman times the writings of Vitruvius [M.V. P. Vitruvius, *De Architectura*, 2.9.12-13, before 27 BC] and Pliny [Pliny the Elder, *Natural History*, c.70 AD] record that the great statue of Diana (Artemis) at Ephesus, as well as the ceiling and roof of her temple, were made of cedar.

According to the Greek naturalist Theophrastus [Theophrastus, Inquiry into Plants (*Historia plantarum*) 5.7.1-2, c. 300 BC] cedar wood was used by the Greeks for the construction of triremes. It is said that the durability of cedar wood in marine conditions is due to the large content of resin that resists fungal rot and insect attack. However, it makes the timber somewhat brittle and very heavy, so ships' masts were normally fashioned from Cilician fir, *Abies cilicica*, which grows with cedar in the northern part of the Mount Lebanon range. When the prophet Ezekiel wrote (27:4b-5) about ship-building, he mentioned the cedar mast from Sanir i.e. Lebanon and not Senir the other name for Hermon where cedar is never likely to have grown. Some commentators have doubted whether the much-branched cedar could be used for masts, but having seen the forests myself I can see how the trees are drawn upwards in close stands, whereas in gardens one sees them planted in isolation where the trees spread out sideways. Cedar and

6

other tree resin was used for caulking between ship-boards to make them water-tight. The cedar oil was also used for mummies and medicine. It was extracted from the timber by a primitive method of heating cedar wood between two hot rocks until the resin dropped down as oil. A few drops of this oil were said to be introduced by shepherds into their sheep's drinking water to stimulate their thirst and feeding. Vitruvius also mentions cedar oil and its use as a preservative: *"When objects like books are rubbed with it, they are unharmed by worms and rot."*

Exploitation and Conservation of Cedar in Ancient Times

The Babylonians, Assyrians and other exploiters of the Lebanese forests considered them to be so extensive that they were inexhaustable. It seems that the ancients valued the forests of Lebanon as much for their hunting as for their timber. They were regarded as royal hunting grounds, especially for the regal animal, the lion. Records show the Egyptian pharaoh Amenothes III and Tutmosis III, the Assyrian kings Assurbanipal and Sennacherib, as well as the Persian Artaxerxes III enjoying the chase. It was against the latter that a revolt in Phoenicia led to the destruction of the royal hunting parks which had been an emblem of Persian occupation. By Roman times, however, the elimination of the eastern Mediterranean timber resources had become a distinct possibility, so the Emperors made laws to control the felling of the better quality timber at high altitudes. In AD 138 Hadrian set up hundreds of forest reserve boundary markers inscribed in Latin. One of them in the Museum of the American University of Beirut was found as a free-standing stone between Zahlé and Swayr with an inscription (reading IMP. HAD. AUG. DEFINITIO SYLVARUM). It may have defined the upper or lower limit of the altitudinal forest where there is now no forest to be seen anywhere in the vicinity. These boundary markers, many of them rough rocks *in situ*, were studied in some detail by Renan early in the 20th century. No trees grow there nowadays, and certainly not cedars, so we can only guess at the former boundaries of the forests. It is ironic that such laws were made two thousand years ago to safeguard these natural resources as sustainable forests, while in the intervening years man has pillaged them remorselessly.



6 Baalbek Temple was probably panelled with cedar wood (Photo. of Temple of Bacchus by F. Nigel Hepper, 1996.)

7 Map of Lebanon (on p. 7) showing the principal localities and reserves where the cedars occur at the present time. In the Chouf (Shouf) area of the Mount Lebanon range: Jabal Barouk and Ain Zhalta (Zahalta), 1500-1800m alt. In the northern parts of Mount Lebanon range: between Tannourine el Fouqa and Hadet (Hadeth) ej Jobbé 1500-1800m alt.; Bsharre (Bcharré) 1900-1950m alt.; Ehden 1450-1700m alt.; Jabal Qammoua 1500-1800m alt.

The Cedars of Lebanon.
Engraving from Louis- François Cassas *circa* 1785.
(Photo courtesy of Richard Chahine).

